Appln. No.: 10/619,115
Amendment Dated February 12, 2007
Reply to Office Action of November 16, 2006

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Canceled).

2. (Previously Presented) An optical component housing according to claim 7, wherein the substrate is selected from a group consisting of an aluminum oxide ceramic, a nickel-cobalt alloy, aluminum nitride ceramic, or silicon carbide ceramic.

3. - 6. (Canceled).

7. (Currently Amended) An optical component housing comprising a substrate having an optical component mount aperture formed therein and a substantially planar fiber mount region formed on the substrate and adjacent to the optical component mount aperture,

wherein the substrate is mounted to a base that is distinct from the substrate, the optical component mount aperture is configured to receive an optical component therein and the optical component is mounted to thea base that is distinctseparate from the substrate.

8. (Previously Presented) An optical component housing according to claim 7, further comprising an optical component placed within the optical component mount aperture.

9. (Original) An optical component housing according to claim 8, further comprising a metallic mount pad formed over the substantially planar fiber mount region and configured to bond to a metal solder.

10. (Original) An optical component housing according to claim 9, further comprising a metallized optical fiber coupled to the metallic mount pad by the metal solder to optically couple the fiber and the optical component.

11. (Original) An optical component housing according to claim 8, further comprising a fiber mount pad formed over the substantially planar fiber mount region and configured to bond to a glass solder.

12. (Original) An optical component housing according to claim 11, further comprising a bare optical fiber coupled to the fiber mount pad by the glass solder to optically couple the fiber and the optical component.

13. (Previously Presented) A fiber-coupled optical component comprising:

a substrate formed from a semiconductor of a first conductivity type and having an optical component region and a substantially planar fiber mount region formed directly on the substrate and adjacent to the optical component region;

an active layer selected from a group consisting of a bulk gain material and a quantum well structure formed on the substrate over the optical component region;

a semiconductor layer of a second conductivity type different from the substrate, the semiconductor layer formed over the active layer;

an electrode layer of a high conductivity material formed over the semiconductor layer; and

an optical output coupler formed on a surface of the active layer to provide radiation emitted from the active layer,

wherein the substantially planar fiber mount region is configured to permit alignment of an optical fiber in first and second directions using at least a top view and a side view.

14. (Original) A fiber-coupled optical component according to claim 13, further comprising a metallic mount pad formed over the substantially planar fiber mount region and configured to bond to a metal solder.

15. (Original) A fiber-coupled optical component according to claim 14, further comprising a metallized optical fiber coupled to the metallic mount pad by the metal solder to optically couple the fiber and the optical output coupler.

16. (Original) A fiber-coupled optical component according to claim 13, further comprising a fiber mount pad formed over the substantially planar fiber mount region and configured to bond to a glass solder.

17. (Original) A fiber-coupled optical component according to claim 16, further comprising a bare optical fiber coupled to the fiber mount pad by the glass solder to optically couple the fiber and the optical output coupler.

18. (Currently Amended) A method for forming a fiber-coupled optical component housing, comprising the steps of:

a) forming a ceramic substrate;

b) forming an optical component mountable aperture on a surface of the substrate;

c) forming a substantially planar fiber mount region on a surface of the ceramic substrate and adjacent to the optical component mountable aperture;

d) mounting the substrate to a base that is distinct from the substrate; and

~~d)~~e) placing an optical component within an area defined by the optical component mountable aperture to mount the optical component to thea base that is distinct~~separate~~ from the substrate.

19. (Original) A method according to claim 18, further including the steps of:

a) forming a metallic mount pad over the substantially planar fiber mount region and configuring said mount pad to bond with a metal solder; and

b) securing a metallized optical fiber to the metallic mount pad by the metal solder to optically couple the fiber and the optical component.

20. (Original) A method according to claim 18, further including the steps of:

a) forming a fiber mount pad over the substantially planar fiber mount region and configuring said mount pad to bond with a glass solder; and

b) securing a bare optical fiber to the fiber mount pad by the glass solder to optically couple the fiber and the optical component.

21. (Previously Presented) A method for forming a fiber-coupled optical component, comprising the steps of:

a) forming a substrate from a III/V semiconductor material of a first conductivity type;

b) forming an active layer selected from a group consisting of a bulk gain material and a quantum well structure, the active layer being formed over a portion of the substrate;

c) forming a semiconductor layer over the active layer from a III/V material of a second conductivity type different from the substrate;

d) forming an electrode layer over the semiconductor layer from a high conductivity material;

e) forming a substantially anti-reflective optical output coupler on a face of the active layer; and

f) forming a substantially planar fiber mount region directly on a surface of the substrate and adjacent to the optical output coupler,

wherein the substantially planar fiber mount region is configured to permit alignment of an optical fiber in first and second directions using at least a top view and a side view.

22. (Original) A method according to claim 21, further including the steps of

a) forming a metallic mount pad over the substantially planar fiber mount region and configuring said mount pad to bond with a metal solder; and

b) securing a metallized optical fiber to the metallic mount pad by the metal solder to optically couple the fiber and the optical output coupler.

23. (Original) A method according to claim 21, further including the steps of:

a) forming a fiber mount pad over the substantially planar fiber mount region and configuring said mount pad to bond with a glass solder; and

b) securing a bare optical fiber to the fiber mount pad by the glass solder to optically couple the fiber and the optical output coupler.

24. (Previously Presented) An optical component housing comprising:

a high thermal conductivity base;

a low thermal conductivity substrate having a substantially planar fiber mount region formed on a surface of the substrate and an aperture formed therein, the

substrate abutting the high thermal conductivity base with the surface at the same level as the base; and

an unpackaged optical component mounted on the base in the aperture, said component having a top surface metallized to serve as an electrode.

25. (Original) The optical component housing according to claim 24, further comprising a metallized fiber mount pad formed over the substantially planar fiber mount region, and a metallized optical fiber mounted to the fiber mount pad with a metal solder.

26. (Original) The optical component housing according to claim 24, further comprising a fiber mount pad formed over the substantially planar fiber mount region and configured to bond to a glass solder, and a bare optical fiber mounted to the fiber mount pad with a glass solder.